NOAA FISHERIES

SOUTHEAST FISHERIES SCIENCE CENTER
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Forecast of the 2003 Offshore Brown Shrimp Season-From the Mississippi River to the US-Mexico Border

Each year at this time scientists at NOAA Fisheries Southeast Fisheries Science Center's Galveston Laboratory forecast brown shrimp production from the western Gulf of Mexico for the upcoming year (July 2003 – June 2004). Data obtained from NOAA Fisheries Galveston Laboratory's Fishery Management and Ecology Branches, NOAA Fisheries port agents, National Climatic Data and Weather Centers, Louisiana Department of Wildlife and Fisheries, Texas Parks and Wildlife Department, and the commercial shrimp industry contribute to this forecast. Juvenile brown shrimp abundance and growth estimates are obtained through monitoring the inshore commercial shrimp fisheries in Texas and the inshore and nearshore fisheries in Louisiana. Environmental variables are further quantified to assess the amount and type of habitat required for growth and survival of young shrimp. Collectively, these indices provide the estimate of stock strength prior to movement into the offshore fishery.

The 2003 abundance indices are varied with respect to offshore brown shrimp production. The Galveston Bay bait index forecasts a below average year at 21.6 million pounds from offshore Texas waters from July 2003 through June 2004. The 2003 Louisiana indices point to an above average yield of approximately 42.0 million pounds of brown shrimp this season from west of the Mississippi River to the Texas-Louisiana border. Overall, the western Gulf of Mexico should expect an annual brown shrimp production of approximately 63.6 million pounds during the 2003-2004 season. This is above the 1960-2001 historical average of 55.2 million pounds for the two-state area.

Peak recruitment of postlarval brown shrimp in Texas and western Louisiana estuaries typically occurs during February through early April after water temperatures exceed 60° F, with optimal growth occurring after 68° F. Favorable nursery area appears to be related to the distribution of high salinity waters as well as tidal water height in interior marshes. As in 2002, rainfall this year has been below normal for Texas and western Louisiana. While there were no extreme conditions, temperatures in February and March were cooler than the historical average, especially evident in Texas. Several cool fronts occurred during this time period. During the last week of March, a critical phase during recruitment, a cool front dropped temperatures for several days and resulted in very low tides in estuaries. This may have increased shrimp mortality and decreased the amount of available nursery area. Warmer temperatures in April and May accompanied by high salinities, however, allowed for optimal growth and survival of young shrimp during this time period.